ATM-4008

4U 14-slot Industrial Automation Chassis with 6” LCD

ATM-4233

4U 8-slot Industrial Automation Chassis with 6” LCD

Users Manual

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Product Warranty (1 year)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for one year from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

警告使用者

這是甲類的資訊產品，在居住的環境中使用時，
可能會造成射頻干擾，在這種情況下，使用者會
被要求採取某些適當的對策。

Technical Support and Assistance

Step 1. Visit the Advantech web site at **www.advantech.com/support** where you can find the latest information about the product.

Step 2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

Packing List

Before setting up the system, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.

- ATM-4233 Series Chassis

Accessory pack, including:

- CABLE 6P-6P-6P 20cm PS/2 KB & MOUSE
- CABLE 6P/6P 20cm Mini DIN (M)
- Flat cable 34P 64 cm 3.5" FDD X2 for CPU Card
- Flat cable 40P 45CM GRAYFOR DMA-66 PIN20 I.P. x 2
- POWER Cable UL/CSA(USA) 180D 125V10A 8M
- Handle (Black) x 2
- HDD framework for IPC serial A1 x 2
- Rack Mounting Bracket (R)
- Rack Mounting Bracket (L)
- BUMPON BLACK 20.6*20.6*7.6mm x 4
- Registration and 1 year Warranty card Rev. A2
- Driver/Manual CD-ROM
- Screw Bag
  - -S/S D=7.8 H=2.5 + M4*8L ST BLK x 8
  - -1/4R/S D=6.6 H=1.5 + M3*5L ST Ni x 8
  - -H/S(W) D=6.5 H=2.7 + #6-32*6.2L ST Ni x 9
  - -POST F=#6-32*4.7L M=#6-32*4L B=6 H=6.5 Cu Ni x 6

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:

a. The power cord or plug is damaged.

b. Liquid has penetrated into the equipment.

c. The equipment has been exposed to moisture.

d. The equipment does not work well, or you cannot get it to work according to the user's manual.

e. The equipment has been dropped and damaged.

f. The equipment has obvious signs of breakage.

15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -

20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Wichtige Sicherheishinweise

1. 1. Bitte lesen sie Sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die NetzanschluBsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor überhitzung schützt. Sorgen Sie dafür, daB diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim. AnschluB an das Stromnetz die AnschluBwerte.
9. Verlegen Sie die NetzanschluBleitung so, daB niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.

12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von authorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:

a - Netzkabel oder Netzstecker sind beschädigt.

b - Flüssigkeit ist in das Gerät eingedrungen.

c - Das Gerät war Feuchtigkeit ausgesetzt.

d - Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.

e - Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.

f - Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.

15. VOSICHT: Explisionsgefahr bei unsachgemaben Austausch der Batterie.Ersatz nur durch densellben order einem vom Hersteller empfohlene-mahnlichen Typ. Entsorgung gebrauchter Batterien navh Angaben des Herstellers.
16. ACHTUNG: Es besteht die Explosionsgefahr, falls die Batterie auf nicht fach-männische Weise gewechselt wird. Verfangen Sie die Batterie nur gleicher oder entsprechender Type, wie vom Hersteller empfohlen. Entsorgen Sie Batterien nach Anweisung des Herstellers.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weiger.

Haftungsausschluss: Die Bedienungsanleitungen wurden entsprechend der IEC-704-1 erstellt. Advantech lehnt jegliche Verantwortung für die Richtigkeit der in diesem Zusammenhang getätigten Aussagen ab.

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CHAPTER 1

General Information

Chapter 1 General Information

1.1 Introduction

The ATM-4008 and ATM-4233 Rackmounted series are 4U height 14-slot/8-slot rackmount IPC workstations with a 6" LCD display and built-in slim keyboard and touch pad drawer. They are designed as all-in-one and cost-effective solutions for traditional IPC users and new industrial automation control applications.

Both models include a versatile passive-backplane and an optional power supply for different application inquiries, 10 function and cursor keys for SI/VAR application program, 2 front USB ports for front accessible USB device and slim type 85 key keyboard and touch pad drawer for easy maintenance or upgrade, and a 6" TFT LCD screen for information display like charts, trends, control panels, programming or production data or field monitoring record; and dual easy maintenance cooling fans provide abundant cooling to the whole system.

A wide range of standard computing peripherals from the current Advantech IPC family can be integrated into the ATM models to meet different application development requirements for mission-critical applications that need to run non-stop 24 hours a day, 7days a week.

1.2 General Specifications

General

- **Construction**: Heavy duty steel chassis
- **Drive bay**: 3 x vibration damped, front-accessed 5.25" x 2 and 3.5" x 1
- **Cooling system**: Dual easy-to-replace 84 ~ 114 CFM cooling fans with front-accessible air filters
- **Controls**: Power On/Off Button in front panel (behind the lockable door). Reset Button in front Panel (behind the lockable door). OSD (On/Off, Menu, Select, Auto, Right, Left)
- **LED Indicator:** Power LED for system power status

  HDD LED for HDD activity
- **Connectors:** Front access USB x 1; 6-pin PS/2 keyboard port for external connection (rear panel)
- **Paint Color:** Pantone 4C 2X Black, textured
- **Operating temperature:** 0 ~ 40° C (32 ~ 104° F)
- **Storage temperature:** -20 ~ 60° C (-4 ~ 140° F)
- **Relative Humidity:** 10 ~ 95% @ 40° C, non-condensing
- **Vibration:** (Operating) 5 ~ 500 Hz, 1 grms (Random)

  (Non-operating) 5 ~ 500 Hz, 2.16 grms (Random)
- **Acoustic Noise:** Less than 52 dB sound pressure at 5~28° C (41~82° F)
- **Dimensions:** 482(W) x 173(H) x 450(D) mm (19"x 6.8" x 17.7")
- **Weight**: 16-18kg (35.2 - 39.6lb)
- **Safety:** CE and BSMI compliant, FCC/CCC for integrated system

1.3 Passive Backplane Options

- PCA-6114P4-C: 8ISA/ 4PCI/ 2 PCIMG (ATM-4233)
- PCA-6114P10-B:2 ISA/10 PCI/2 PCIMG (ATM-4233)
- PCA-6108E: 8ISA (ATM-4008/ATM-4023)
- PCA-6108P8-0A1: 8PCI (ATM-4008/ATM-4023)

1.4 ATM Series

Model No.	Description
ATM-4233N10-25Z	14-slot(2 ISA/10 PCI/2 PCIMG) Industrial Automation platform with 6” LCD / 4U /Standard Size/ Rear Wiring/ PCA-6114P10-B / 250W Power Supply
ATM-4233N10-C2	14-slot (2 ISA/10 PCI/2 PCIMG) Industrial Automation platform with 6” LCD / 4U /Standard Size/ Rear Wiring/ PCA-6114P10-B/ PCA-6004VE-00A1(C3 800MHz)/250W Power Supply
ATM-4233N10-C3	14-slot (2 ISA/10 PCI/2 PCIMG) Industrial Automation platform with 6” LCD / 4U /Standard Size/ Rear Wiring/ PCA-6114P10-B/ PCA-6003VE-00A1(PIII)/250W Power Supply
ATM-4233N10-C4	14-slot (2 ISA/10 PCI/2 PCIMG) Industrial Automation platform with 6” LCD / 4U /Standard Size/ Rear Wiring/ PCA-6114P10-B/ PCA-6186VE-00A1(P4 800 MHz FSB)/250W Power Supply
ATM-4233N4-25Z	14-slot(8 ISA/4 PCI/2 PCIMG) Industrial Automation platform with 6” LCD /4U /Standard Size/ Rear Wiring/ PCA-6114P4-C / 250W Power Supply
ATM-4233N4-C2	14-slot (8 ISA/4 PCI/2 PCIMG) Industrial Automation platform with 6” LCD /4U/Standard Size/Rear Wiring/ PCA-6114P4-C/ PCA-6004VE-00A1(C3 800MHz)/250W Power Supply
ATM-4233N4-C3	14-slot (8 ISA/4 PCI/2 PCIMG) Industrial Automation platform with 6” LCD /4U/Standard Size/Rear Wiring/ PCA-6114P4-C/ PCA-6003VE-00A1(PIII)/250W Power Supply
ATM-4233N4-C4	14-slot (8 ISA/4 PCI/2 PCIMG) Industrial Automation platform with 6” LCD /4U/Standard Size/Rear Wiring/ PCA-6114P4-C/ PCA-6186VE-00A1(P4 800 MHz FSB)/250W Power Supply

1.4.1 ATM-4008

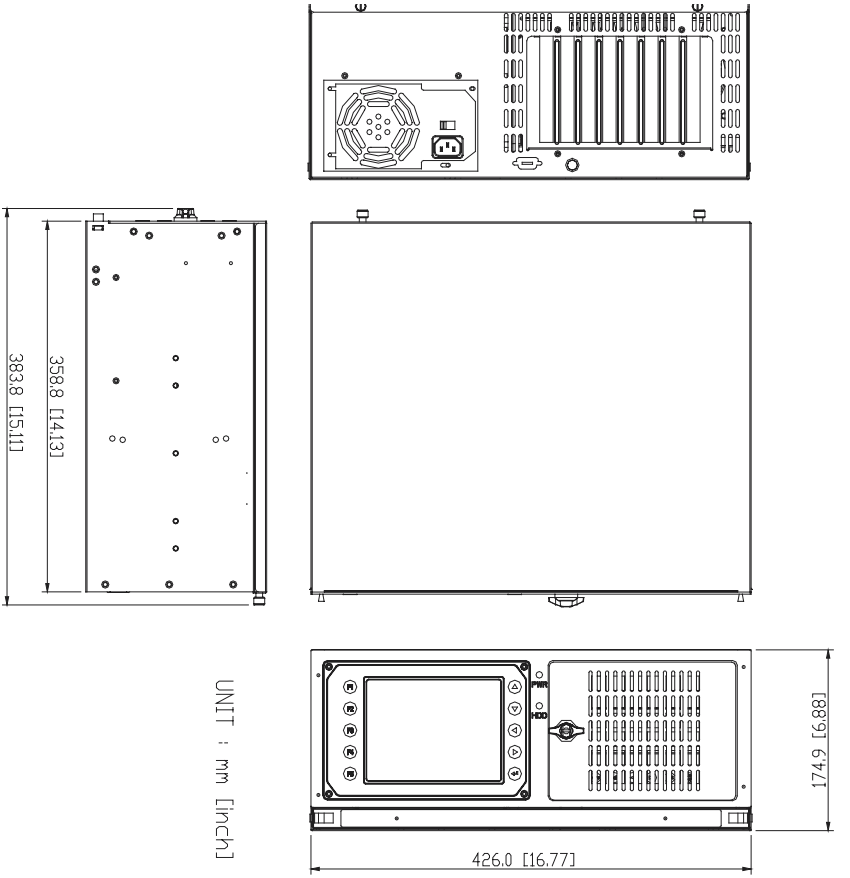
Model No.	Description
ATM-4008R1-K	8 ISA slot Industrial Automation platform with 6” LCD /4U /Half Size/Rear Wiring/ PCA-6108E (rev.C1) / 250W Power Supply
ATM-4008R1-KC3	8 ISA slot Industrial Automation platform with 6” LCD /4U /Half Size/Rear Wiring/ PCA-6108E (rev.C1) / PCA-6774F-02A1(PIII)/250W Power Supply
ATM-4008R2-K	8 PCI slot Industrial Automation platform with 6” LCD /4U /Half Size/Rear Wiring/ PCA-6108P8 (rev.A1) / 250W Power Supply
ATM-4008R2-KC3	8 PCI slot Industrial Automation platform with 6” LCD /4U /Half Size/Rear Wiring/ PCA-6108P8 (rev.A1) / PCI-6872F-00A1(PIII)/250W Power Supply

1.4.2 ATM-4023

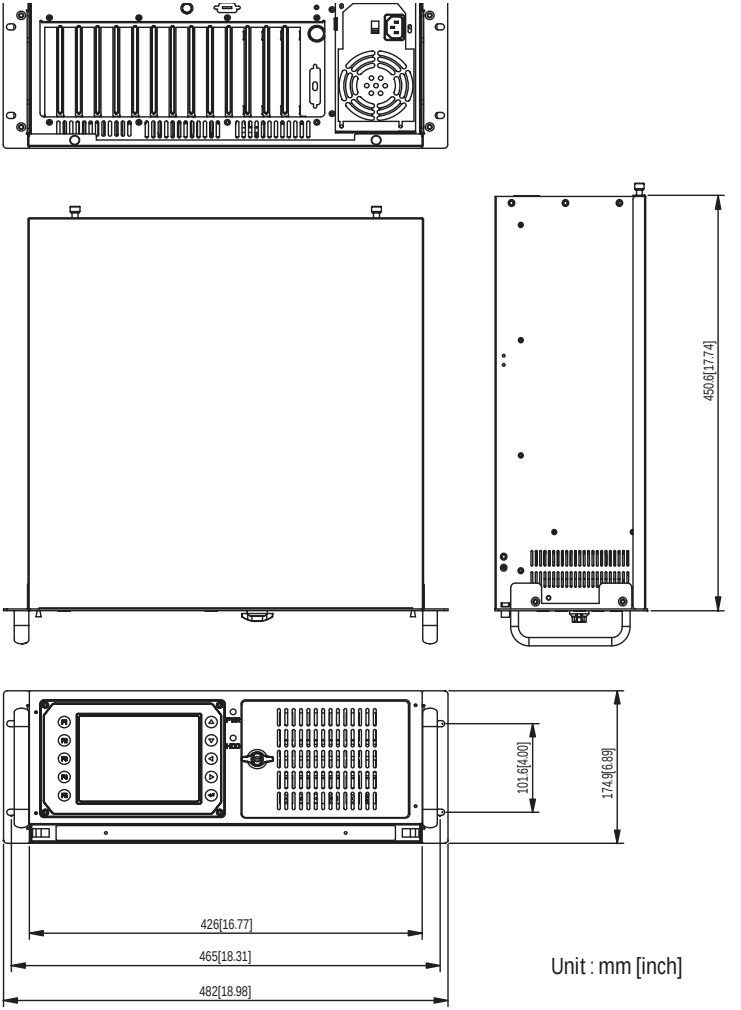
Model No.	Description
ATM-4023H0-25Z	8 ISA slot Industrial Automation platform with 6.4” LCD /4U /Half Size/Front Wiring/ PCA-6108E (rev.C1) / 250W Power Supply
ATM-4023H0-B1	8 ISA slot Industrial Automation platform with 6.4” LCD /4U /Half Size/Front Wiring/ PCA-6108E (rev.C1) / PCA-6774F-02A1(PIII)/250W Power Supply
ATM-4023H0-B2	8 ISA slot Industrial Automation platform with 6.4” LCD /4U /Half Size/Front Wiring/ PCA-6108E (rev.C1) / PCA-6751-F0B2 (P266) /250W Power Supply
ATM-4023H8-25Z	8 PCI slot Industrial Automation platform with 6.4” LCD /4U /Half Size/Front Wiring/ PCA-6108P8 (rev.A1) / 250W Power Supply
ATM-4023H8-A1	8 PCI slot Industrial Automation platform with 6.4” LCD /4U /Half Size/Front Wiring/ PCA-6108P8 (rev.A1) / PCI-6872F-00A1(PIII)/250W Power Supply
ATM-4023H8-A2	8 PCI slot Industrial Automation platform with 6.4” LCD /4U /Half Size/Front Wiring/ PCA-6108P8 (rev.A1) / PCI-6870F-00A1(PIII)/250W Power Supply

1.5 Dimensions

ATM-4008



ATM-4233


450.6[17.74]
101.6[4.00]
174.9[6.89]
426[16.77]
465[18.31]
482[18.98]
Unit : mm [inch]

CHAPTER 2

System Setup

Chapter 2 System Setup

2.1 System Installation

WARNING: Before starting the installation process, be sure to shut down all power from the chassis. Do this by turning off the power switch, and unplugging the power cord from the power outlet. When in doubt, consult with an experienced technician.

2.1.1 Attaching the Handles.

The handles for the front panel are in the accessory box. To install the handles, simply secure them to the front panel with the provided screws.

2.1.2 Removing the top cover and backplane holder

First, remove the chassis cover. The top cover is fixed to the chassis by two thumbscrews.

1. Release two thumbscrews on the rear upper location of the chassis.

Figure 2.1: Top Cover

2. Lift the cover

Figure 2.2: Removing Cover

2.1.3 Chassis Front and Rear Sections

Face the front of the ATM chassis, and you will find a 6" TFT display module with five membrane control keys on each side. There is a front door on the right side and a slim drawer with a 88-key keyboard under the chassis. The front panel switches and I/O interface behind the door are used for system reset, power switch, USB port and brightness control. Facing the rear of the ATM chassis, there is an integrated PS/2 6-pin port, and VGA 15-pin port, please connect with SBC keyboard, mouse and VGA port as shown in figure 2.5.

Figure 2.3: Front View

Figure 2.4: Front Control

System Reset: Press this switch to reinitialize the system. This is the same as the hardware reset button.

Power On/Off Switch: Use this switch to turn on/off the system power.

USB port: If you want to connect any USB interface device to the system, you could use this.

KB/MB IN: Integrated PS/2 type 6-pin Keyboard and Mouse port.

Figure 2.5: Rear View

2.1.4 Drive Bay Installation

The Standard Drive Bay of the ATM series can hold CD-ROM, 5.25"(x2) and 3.5" (x1) devices Installation disk drives.

a. Remove the top cover

b. Release two thumbscrews to draw out the backplane holder until you have enough space to take out driver bay. See Figure 2.6

c. Undo the six screws for the cushion.

d. Lift off the Standard Drive Bay.

e. Insert the drives into their proper locations in the drive bay and secure them with the screws provided.

f. Connect the disk drive power and signal cables.

Figure 2.6: Drive Bay

2.2 Keyboard

ATM-4008 and ATM-4233 comes with a US version 88-key slim type keyboard, which is located on the button of chassis. The slim type keyboard is integrated with the chassis and has a slide rail on both sides. The keyboard can be pulled out or pushed into the chassis very easily after pressing both latches together. Refer to figure 2-10..

Figure 2.7: Slim-type Keyboard

2.3 Backplane

Please refer to figure 2-8 for a suitable cable connection of backplane

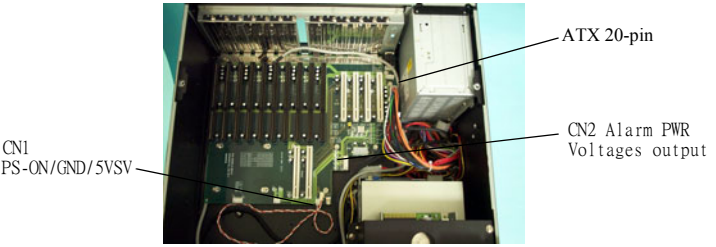


Figure 2.8: Backplane Connections

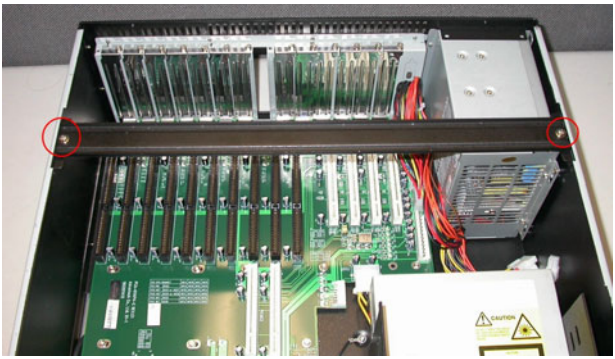
2.4 Power Supply

ATM-4008 and ATM-4233 comes with a power supply bracket. Please use this bracket for PS/2 power and remove this bracket if you want to install a redundant power supply.

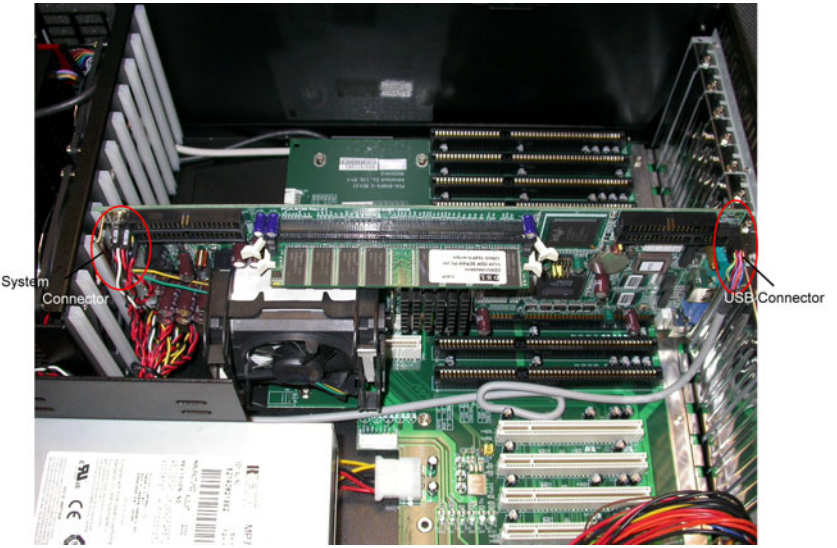
2.5 Installing CPU Cards

To install slot board computers and other add-on boards:

1. Remove the chassis cover.
2. Take out the hold down cramp



3. Insert the SBC or add-on cards on suitable location
4. Connect the cables to the right location of the CPU Card. For example Figure 2-9.
5. Align and fix the screw to tighten the card to a fixed position
6. Return the top cover after fixing the hold down cramp.



CHAPTER 3

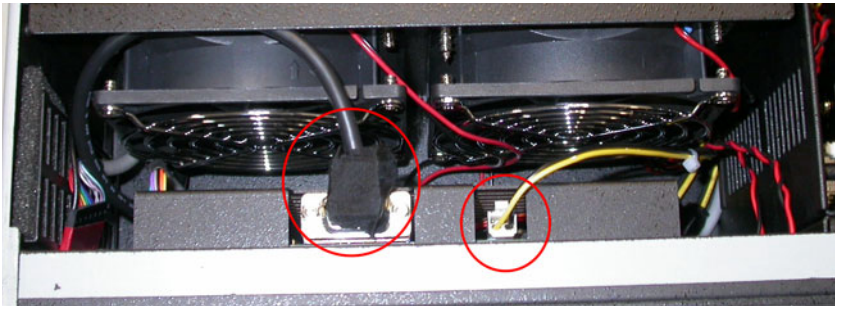
LCD Display Module & Accessory

Chapter 3 LCD Display Module & Accessory

The LCD display module is located at the left side of the front bezel. It can be moved out from chassis by the following process:

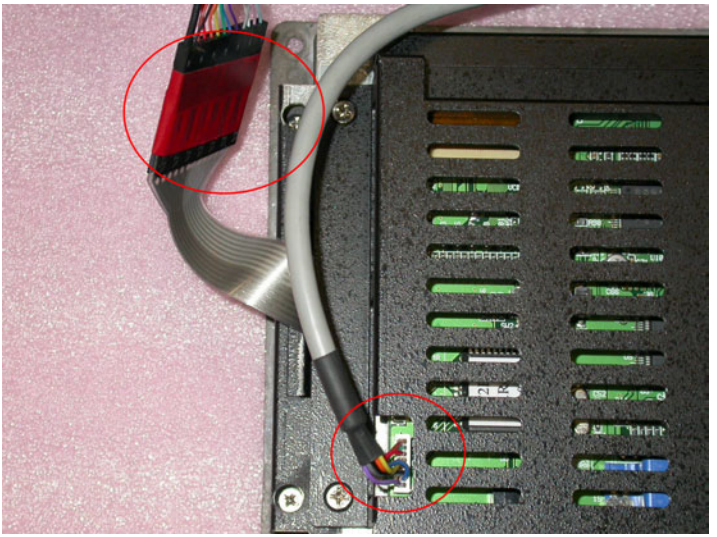
a. Unscrew the four screws of the LCD module. Please refer to figure 3.1 for their locations.

b. Release the two cables that connect the chassis with the LCD Module. Refer to Figure 3.2.



Please move the LCD module toward away from chassis to get enough space putting the LCD module down.

c. Release the cabling which connect with LCD module or undo some screws to open the cover of LCD module to do the necessary process, which you need.



3.1 LCD Display Module Layout

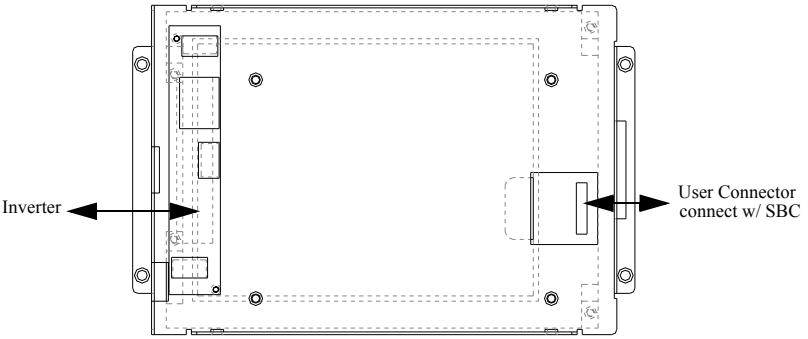


Figure 3.1: Layout of LCD Module Rear

3.2 Internal K/B and Mouse Board

CN1 is connected with a slim type keyboard cable, which is connected with external K/B and mouse board. CN3 is connected with a touch pad board. Refer to figure 3-6 to find the correct location.

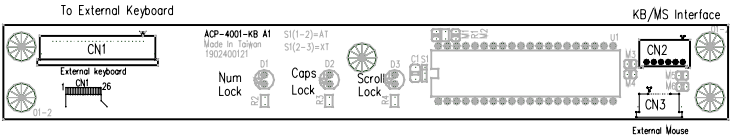


Figure 3.2: Internal K/B and Mouse Board

3.3 External K/B and Mouse Board

The J1 is connecting to CN2 of internal K/B and mouse board. JP2 is connecting with 10 function keys membrane cable. CN2 connect with K/B and Mouse port of SBC by a PS/2 6-pin cable. Refer figure 3-7 to find correct location.

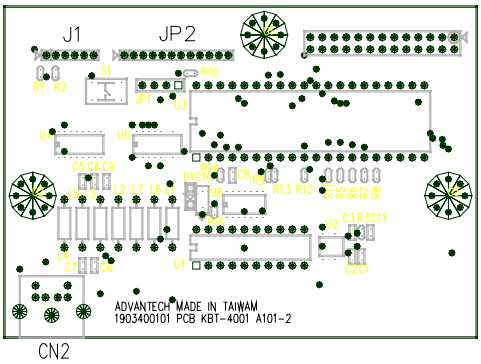


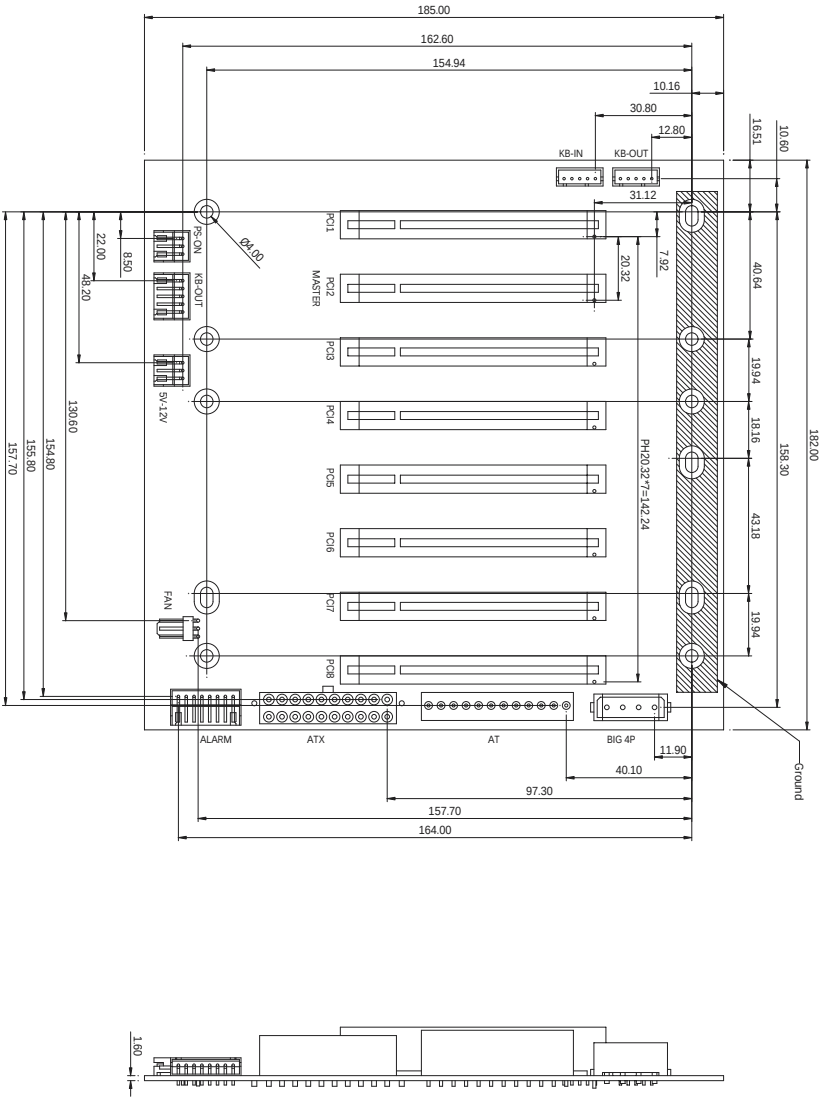
Figure 3.3: External K/B and Mouse Board

Appendix A

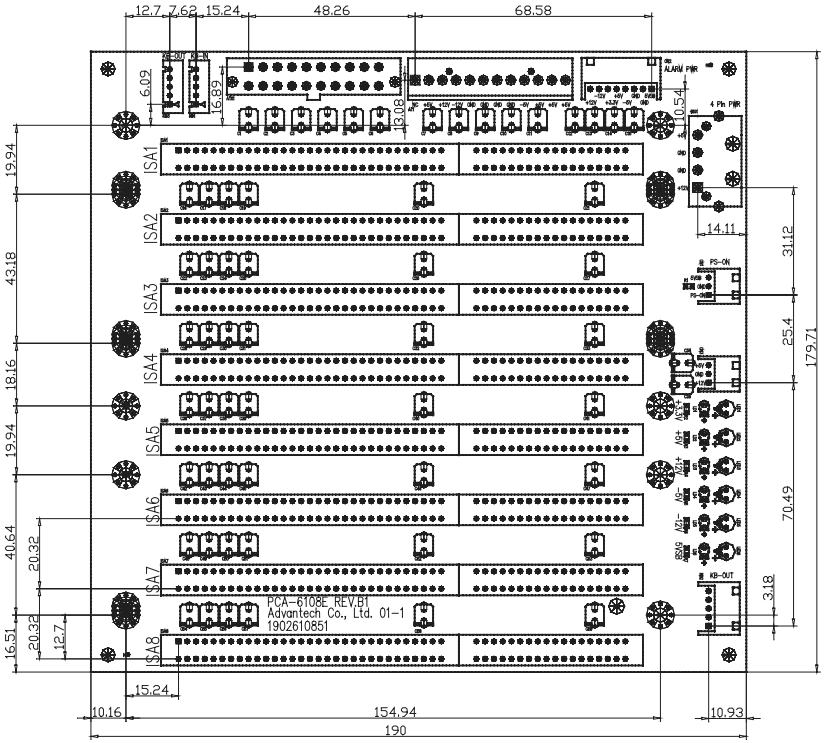
Backplane Layouts

Appendix A Backplane Layouts

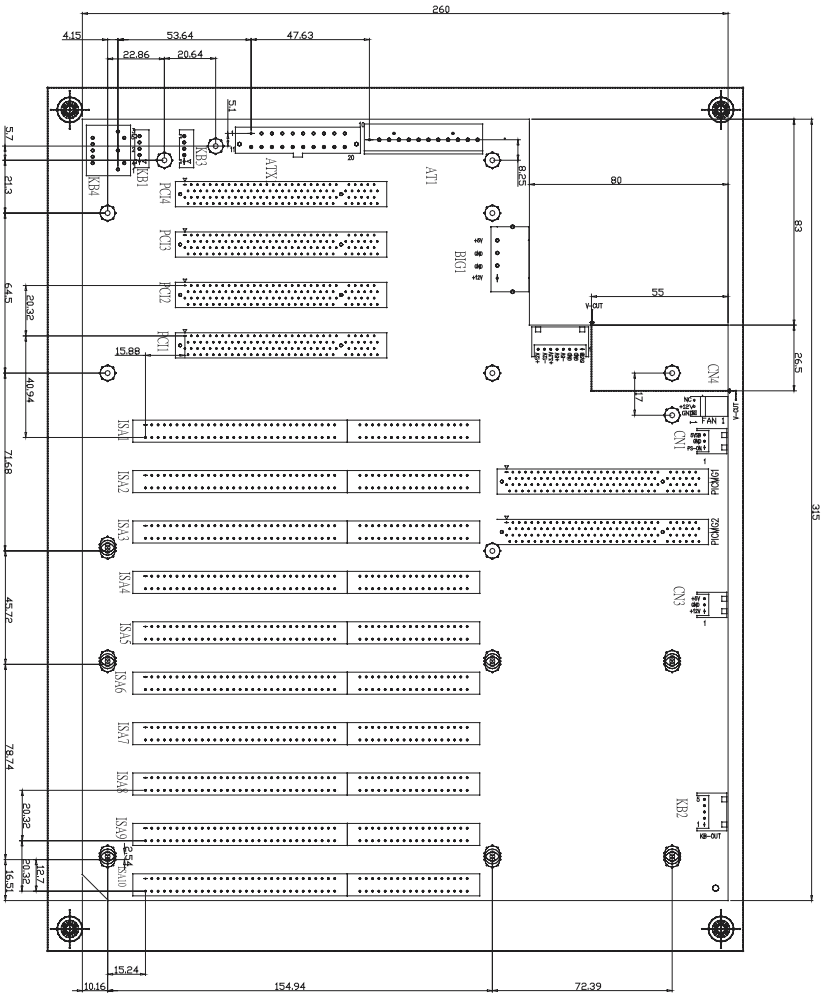
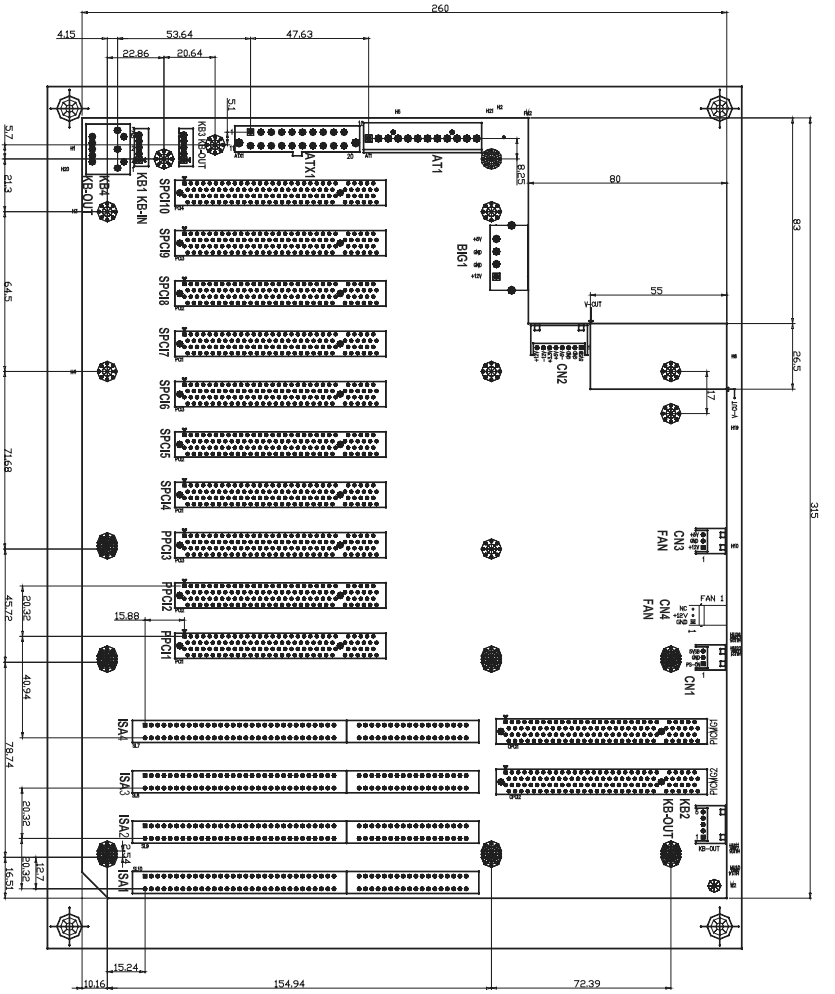
A.1 PCA-6108P8-0A1



A.2 PCA-6108E-B



A.3 PCA-6114P4-C



A.4 PCA-6114P10-B